QUANTUM GENERALIZED ENTROPIES AND MEASURES OF QUANTUM CORRELATIONS

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The properties of quantum generalized entropies, which are inspired in the family of (h, ϕ)-functionals given by Salicrú et al for classical distributions, are studied. The quantum versions comprise some known cases as von Neumann and others, and provide a plethora of entropies the behaviour of which we analyze under the action of quantum operations. For given subfamilies of the quantum (h, ϕ)-entropies, the problem of detection of quantum entanglement is addressed and the application as measures of quantum correlations for bipartite systems is discussed.

[1] G.M. Bosyk et al. Quantum Inf Process **15**, 3393 (2016).

[2] G.M. Bosyk et al. Physica A **462**, 390 (2016).